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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
ADAMS, CHARLES D

ART UNIT	PAPER NUMBER
2164	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/659,129	THERRIEN ET AL.
	Examiner	Art Unit	
	CHARLES D. ADAMS	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>20 January 2010</u>.

2a) ☐ This action is **FINAL**.　　2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-5,7-17 and 19-26</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-5, 7-17, and 19-26</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a) ☐ All　b) ☐ Some * c) ☐ None of:

　　　1. ☐ Certified copies of the priority documents have been received.

　　　2. ☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Remarks

1.   In response to communications filed on 20 January 2010, claims 1, 4, 5, 7, and

17 are amended, claim 6 is cancelled. Claims 1, 3-5, 7-17, and 19-26 are pending in the

application.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 3-5 and 17-25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Weinman, JR (US Pre-Grant Publication 2002/0055972), in view of

Whiting et al. (US Patent 5,778,395) and further in view of Zayas et al. (US Patent

6,560,615).

As to claim 1, Weinman teaches:

a fileserver configured to contain shares of data and to be in communication with

at least one local repository that is in communication with at least one remote

repository, wherein two or more repositories are configured to store a replica of a file

(see paragraph [0030]), wherein a storage location and a number of replicas in each

repository can be configured to change over time (see paragraph [0033]);

wherein based on a criticality of the file, the number of stored replicas can be increased or decreased in at least one repository (see paragraphs [0033] and [0035]);

the fileserver includes:

a filter driver operative to intercept input or output activity initiated by the client file requests, including modification of any existing stored files and/or creation of new files as they occur, and further configured to capture a snapshot of a set of the shares of data at a particular point in time (see paragraph [0057]);

a file system in communication with the filter driver and operative to store client files (see paragraph [0037] and [0045]);

the fileserver is configured to store a unique protection policy for each share of data on the fileserver, the protection policy defines:

repositories used to protect each share of data (see paragraphs [0045]-[0046]. The repositories are required to be within a certain distance of each other);

number of replicas of each file that are maintained in each repository (see paragraphs [0044] and Figure 5. Each repository that contains a replica contains a single instance of that replica); and

maintenance of modifications to each share of data (see paragraphs [0045], [0046], and [0057]);

based on the definition in the protection policy the filter driver is configured to capture the snapshot (see paragraph [0057]);

Weinman does not teach:

a protection policy defining frequency of data protection;

wherein each repository includes multiple repository nodes, at least one of which

is configured to store the replica of the file,

Whiting et al. teaches:

a protection policy defining frequency of data protection (see

Whiting et al. 7:59-8:20);

wherein each repository includes multiple repository nodes, at least one of which

is configured to store the replica of the file (see Whiting et al. 7:8-15 and 7:32-58 and

Figure 2. There are multiple user directories in a storage location),

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Weinman by the teachings of Whiting et

al., because Whiting et al. provides Weinman the benefit of a lower-cost backup solution

that simultaneously reduces network band-width consumption and decreases the time

required for backup and restore (see 4:61-65).

Whiting et al. does not teach:

wherein a share of data is created on the fileserver as a directory or folder of

storage capacity;

to maintain a list of modified and/or created files since a last snapshot occurred;

Zayas et al. teaches wherein a share of data is created on the fileserver as a

directory or folder of storage capacity (see 4:39-57);

and to maintain a list of modified and/or created files since a last snapshot

occurred (see 5:31-40 and 7:16-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have modified Weinman by the teaching of Zayas et al.,

because Zayas et al. provides the benefit of insertion and removal of entries in a

modified file list (MFL). In this way, a file is added only once to a MFL (see 7:40-45)

which greatly reduces the already low computer system overhead imposed by MFL

maintenance (see 8:2-4).

As to claim 3, Weinman as modified teaches:

a location cache configured to determine based on the protection policy which

repository will be used to protect each share of data (see Weinman paragraphs [0045]-

[0046]); and

a location manager coupled to the location cache and operative to update the

location cache when the fileserver protects a new share of data in a specific repository

node (see Weinman paragraphs [0045]-[0047]).

As to claim 4, Weinman as modified teaches:

the local repository is further adapted to receive replicated files from the

fileserver (see Weinman paragraph [0052]); and

the local repository includes a protection policy component operative to

determine whether new versions of existing files should be compressed, and whether

older versions of existing files should be maintained (see Weinman paragraphs [0030]-
[0031], [0046] and [0052]. The protection management tables in the central index server
may be handled by a doubly-linked structure stored on each server).

As to claim 5, Weinman as modified teaches:

the remote repository is further adapted to receive replicated files from the local
repository (see Weinman paragraph [0052]);

the remote repository includes a protection policy component operative to
determine whether new versions of existing files should be compressed and whether
older versions of existing files should be maintained (see Weinman paragraphs [0030]-
[0031], [0046] and [0052]. The protection management tables in the central index server
may be handled by a doubly-linked structure stored on each server).

As to claim 17, Weinman teaches:

a fileserver configured to contain shares of data and to be in communication with
at least one local repository that is in communication with at least one remote
repository, wherein two or more repositories are configured to store a replica of a file
(see paragraph [0030]), wherein a storage location and a number of replicas in each
repository can be configured to change over time (see paragraph [0033]);

said fileserver includes:

filter means for intercepting input or output activity initiated by client file requests,
including modification of any existing stored files and/or creation of new files as they

occur, and for capturing a snapshot of a set of the shares of data at a particular point in time (see paragraph [0057]);

file system means in communication with the filter driver, the file system means for storing client files (see paragraph [0037] and [0045]);

the fileserver is configured to store a unique protection policy for each share of data on the fileserver, the protection policy defines;

repositories used to protect each share of data (see paragraphs [0045]-[0046]. The repositories are required to be within a certain distance of each other)

number of replicas of each file that are maintained in each repository (see paragraphs [0044] and Figure 5. Each repository that contains a replica contains a single instance of that replica); and

maintenance of modifications to each share of data (see paragraphs [0045], [0046], and [0057]);

based on the definitions in the protection policy, said filter driver means is configured to capture the snapshot (see paragraph [0057]).

Weinman does not teach:

a protection policy defining frequency of data protection;

wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file,

Whiting et al. teaches:

a protection policy defining frequency of data protection (see 7:59-8:20);

wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file (see 7:8-15 and 7:32-58 and Figure 2. There are multiple user directories in a storage location),

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Weinman by the teachings of Whiting et al., because Whiting et al. provides Weinman the benefit of a lower-cost backup solution that simultaneously reduces network band-width consumption and decreases the time required for backup and restore (see 4:61-65).

Whiting et al. does not teach:

wherein a share of data is created on the fileserver as a directory or folder of storage capacity;

to maintain a list of modified and/or created files since a last snapshot occurred;

Zayas et al. teaches wherein a share of data is created on the fileserver as a directory or folder of storage capacity (see 4:39-57);

and to maintain a list of modified and/or created files since a last snapshot occurred (see 5:31-40 and 7:16-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Weinman by the teaching of Zayas et al., because Zayas et al. provides the benefit of insertion and removal of entries in a modified file list (MFL). In this way, a file is added only once to a MFL (see 7:40-45) which greatly reduces the already low computer system overhead imposed by MFL maintenance (see 8:2-4).

As to claim 20, <u>Weinman</u> as modified teaches wherein, based in the protection policy, the fileserver is configured to determine the location of repositories and a number of replicas of the files to be stored in each repository (see <u>Weinman</u> paragraphs [0045]-[0046]. The repositories are required to be within a certain distance of each other).

As to claim 21, <u>Weinman</u> as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine whether to purge a file from a repository after the file has been deleted from a set of files (see <u>Zayas et al.</u> 7:11-15 and 8:5-14).

As to claim 22, <u>Weinman</u> as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine whether to keep a version history of a file in the set of files (see <u>Whiting et al</u>. 7:59-8:20 and 34:24-36).

As to claim 23, <u>Weinman</u> as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine a specified backup frequency for a repository (see <u>Whiting et al</u>. 5:2-8 and 33:49-51).

As to claim 24, <u>Weinman</u> as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine a specified type of compression for a file in the set of files (see <u>Whiting et al</u>. 8:21-40).

As to claim 25, <u>Weinman</u> as modified teaches wherein, based on the protection policy, the fileserver is further configured to determine a specified caching level of a repository (see <u>Whiting et al</u>. 6:52-7:2).

4.   Claims 7-16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Weinman, JR</u> (US Pre-Grant Publication 2002/0055972), in view of <u>Parker et al</u>. (US Patent 6,847,982) and further in view of <u>Zayas et al</u>. (US Patent 6,560,615).

As to claim 7, <u>Weinman</u> teaches:

storing a version of a file within a set of files on a primary disk storage system (see paragraph [0052]);

capturing a snapshot of the set of files at a particular point in time based on a backup frequency defined in a protection policy (see paragraph [0057]);

examining the protection policy associated with the set of files to determine where and how to protect files associated with the set of files (see paragraphs [0046]-[0047]);

wherein the protection policy defines:

repositories used to protect each share of data (see paragraphs [0045]-[0046]);

number of replicas of each file that are maintained in each repository (see paragraphs [0044] and Figure 5. Each repository that contains a replica contains a single instance of that replica); and

maintenance of modifications to each share of data (see paragraphs [0045], [0046], and [0057]);

and,

replicating the version of the file to two or more repositories specified by the protection policy, wherein the repositories include at least one of a local repository and a remote repository (see paragraph [0030]), wherein a storage location and a number of replicas of the version of the file can be configured to change over time (see paragraph [0033]);

wherein based on the criticality of the file, the number of stored replicas of the file can be increased or decreased in at least one repository (see paragraphs [0033] and [0035]);

wherein the protection policy is configured to be uniquely defined for each set of files (see paragraphs [0044]-[0046]).

Weinman does not teach:

a protection policy defining frequency of data protection;

wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file;

Parker et al. teaches:

a protection policy defining frequency of data protection (see 9:6-11);

wherein each repository includes multiple repository nodes, at least one of which is configured to store the replica of the file (see 9:57-10:30. There are multiple directories in the repository, at least one of which is configured to store the replica of the file);

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Weinman by Parker et al., because Parker et al. provides Weinman the benefit of using minimum storage onsite, and repeatably and efficiently recreating any requested version of a file (see 2:9-11).

Parker et al. does not teach:

maintaining a list of modified and/or created files since last captured snapshot;

Zayas et al. teaches:

maintaining a list of modified and/or created files since last captured snapshot (see 5:31-40 and 7:16-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Weinman by the teaching of Zayas et al., because Zayas et al. provides the benefit of insertion and removal of entries in a modified file list (MFL). In this way, a file is added only once to a MFL (see 7:40-45) which greatly reduces the already low computer system overhead imposed by MFL maintenance (see 8:2-4).

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As to claim 8, <u>Weinman</u> as modified teaches wherein the file is configured to have at least one version (see <u>Parker et al</u>. 8:17-25).

As to claim 9, <u>Weinman</u> as modified teaches applying reverse delta compression to the versions of the file when a successive version of the file is stored in the repository (see <u>Parker et al</u>. 9:54-10:4).

As to claim 10, <u>Weinman</u> as modified teaches wherein the step of applying reverse delta compression comprises:

Creating another version of the file, wherein the another version of the file is in a version of the file successive to the version of the file (see <u>Parker et al</u>. 9:54-10:4);

Replicating the another version of the file into the local repository and the remote repository (see <u>Parker et al</u>. 6:42-59 and 9:54-10:4);

Replacing the replicated version of the file in the local repository with a reverse delta compressed version representing a difference between the version of the file and the another version of the file and replicating (see <u>Parker et al</u>. 9:54-10:4);

Transmitting the reverse delta compressed version to the remote repository (see <u>Parker et al</u>. 6:42-59. A reverse delta can be sent with the data with the shipping container as well as a forward delta); and

In the remote repository, replacing the version of the file with the reverse delta compressed version to store the another version and the reverse delta compressed

version (see <u>Parker et al</u>. 6:42-59 and <u>Zayas et al</u>. 7:25-32. A reverse delta can be sent

with the data with the shipping container as well as a forward delta).

As to claim 11, <u>Weinman</u> teaches wherein examining a protection policy

associated with the set of files to determine where and how to protect files associated

with the set of files comprises:

determining the location of repositories and a number of replicas of the files to be

stored in each repository (see paragraphs [0044] and Figure 5. Each repository that

contains a replica contains a single instance of that replica).

As to claim 12, <u>Weinman</u> teaches wherein examining a protection policy

associated with the set of files to determine where and how to protect files associated

with the set of files comprises:

determining whether to purge a file from a repository after the file has been

deleted from a set of files (see <u>Zayas et al</u>. 7:11-15 and 8:5-14).

As to claim 13, <u>Weinman</u> teaches wherein examining a protection policy

associated with the set of files to determine where and how to protect files associated

with the set of files comprises:

Determining whether to keep a version history of a file in the set of files (see

<u>Zayas et al</u>. 7:25-40 and <u>Parker et al</u> 9:54-10:4).

As to claim 14, <u>Weinman</u> teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining a specified backup frequency for a repository (see <u>Parker et al</u>. 8:17-25 and 9:6-11).

As to claim 15, <u>Weinman</u> teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining a specified type of compression for a file in the set of files (see <u>Parker et al</u>. 6:42-59. A reverse delta can be chosen along with a forward delta to send to the library).

As to claim 16, <u>Weinman</u> as modified teaches wherein examining a protection policy associated with the set of files to determine where and how to protect files associated with the set of files comprises:

Determining a specified caching level of a repository (see <u>Parker et al</u>. 9:12-14. A storing (caching) frequency level is determined and chosen).

As to claim 26, <u>Weinman</u> as modified teaches wherein the fileserver further includes:

backup means for backing up the modified files into repositories identified in the

protection policy based on the backup frequency (see Parker et al. 9:6-11);

Storage means for storing a latest version of a file in a repository where a prior

version of the file is stored (see Parker et al. 9:54-10:4);

Means for determining a difference between the latest version of the file and the

prior version of the file (see Parker et al. 9:54-10:4);

Means for applying reverse delta compression of the difference (see Parker et al.

9:54-10:4); and

Means for replacing the prior version of the file with the reverse delta

compressed difference between the latest version and the prior version of the file (see

Parker et al. 9:54-10:4).

5.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Weinman, JR (US Pre-Grant Publication 2002/0055972), in view of Whiting et al. (US

Patent 5,778,395), in view of Zayas et al. (US Patent 6,560,615), and further in view of

Parker et al. (US Patent 6,847,982).

As to claim 19, Weinman teaches wherein said fileserver is configured to:

backup said modified files into repositories identified in said protection

policy based on said backup frequency (see Parker et al. 9:6-11); and

store a latest version of a file in a repository where a prior version of said file is

stored (see Parker et al. 9:54-10:4);

determine a difference between said latest version of said file and said prior version of said file (see <u>Parker et al</u>. 9:54-10:4);

apply reverse delta compression to said difference (see <u>Parker et al</u>. 9:54-10:4);

replace said prior version of said file with said reverse delta compressed difference between said latest version and said prior version of said file (see <u>Parker et al</u>. 9:54-10:4).

Response to Arguments

6.   Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES D. ADAMS whose telephone number is (571)272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. D. A./
Examiner, Art Unit 2164

/Charles Rones/
Supervisory Patent Examiner, Art Unit 2164